

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claims 1-59 (Cancelled).

60(Currently amended). A purified non-reducing saccharide-forming enzyme which ~~[[is]]~~ forms a non-reducing saccharide having a trehalose structure as an end unit from a reducing partial starch hydrolysate and which has an optimum temperature of over 40°C but below 60°C, wherein said enzyme comprises the amino acid sequence of SEQ ID NO:1.

61(Currently amended). The purified non-reducing saccharide-forming enzyme of claim 60, wherein said enzyme consists of the amino acid sequence of SEQ ID NO:1.

62(Previously presented). A purified non-reducing saccharide-forming enzyme which forms a non-reducing saccharide having a trehalose structure as an end unit from a reducing partial starch hydrolysate and which has an optimum temperature of over 40°C but below 60°C, wherein said enzyme is a fragment of an enzyme comprising the amino acid sequence of SEQ ID NO:1.

63(Previously presented). The purified non-reducing saccharide-forming enzyme of claim 62, wherein said fragment comprises the amino acid sequence of SEQ ID NO:2 or SEQ ID NO:3.

64(Previously presented). The purified non-reducing saccharide-forming enzyme of claim 62, wherein said fragment comprises the amino acid sequence of SEQ ID NO:4, SEQ ID NO:5, or SEQ ID NO:6.

Claim 65 (Cancelled).

66(Currently amended). The purified non-reducing saccharide-forming enzyme of claim 60, which has the following physicochemical properties:

(1) Action

Forming a non-reducing saccharide having a trehalose structure as an end unit from a reducing partial starch ~~hydrolysates~~ hydrolysate having a degree of glucose polymerization of 3 or higher;

(2) Molecular weight

About 75,000 \pm 10,000 daltons on sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE);

(3) Isoelectric point (pI)

About 4.5 \pm 0.5 on isoelectrophoresis using ampholyte;

(4) Optimum temperature

About 50°C when incubated at pH 6.0 for 60 min;

(5) Optimum pH

About 6.0 when incubated at 50°C for 60 min;

(6) Thermal stability

Stable up to a temperature of about 55°C when incubated at pH 7.0 for 60 min; and

(7) pH stability

Stable at pHs of about 5.0 to about 10.0 when
incubated at 4°C for 24 hours.

67(Currently amended). The purified non-reducing saccharide
forming enzyme of claim 60, which is ~~derived~~ isolated from a
microorganism.

68(Previously presented). The purified non-reducing
saccharide-forming enzyme of claim 67, wherein said microorganism is a
member of the genus *Arthrobacter*.

69(Currently amended). The purified non-reducing
saccharide-forming enzyme of claim 67, wherein said microorganism is
Arthrobacter sp. S34, deposited under accession no. FERM BP-6450, ~~or~~
~~mutants thereof~~.

70(Currently amended). The purified non-reducing
saccharide-forming enzyme of claim 60 obtainable from a ~~microorganism~~
~~selected from the group consisting of~~ *Arthrobacter* sp. S34, deposited
under accession no. FERM BP-6450, ~~and mutants thereof~~.

71(Currently amended). The purified non-reducing
saccharide-forming enzyme of claim 62, which has the following
physicochemical properties:

(1) Action

Forming a non-reducing saccharide having a trehalose
structure as an end unit from a reducing partial
starch ~~hydrolysates~~ hydrolysate having a degree of
glucose polymerization of 3 or higher;

(2) Molecular weight

- About 75,000 \pm 10,000 daltons on sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE);
- (3) Isoelectric point (pI)
- About 4.5 \pm 0.5 on isoelectrophoresis using ampholyte;
- (4) Optimum temperature
- About 50°C when incubated at pH 6.0 for 60 min;
- (5) Optimum pH
- About 6.0 when incubated at 50°C for 60 min;
- (6) Thermal stability
- Stable up to a temperature of about 55°C when incubated at pH 7.0 for 60 min; and
- (7) pH stability
- Stable at pHs of about 5.0 to about 10.0 when incubated at 4°C for 24 hours.

72 (Currently amended). The purified non-reducing saccharide forming enzyme of claim 62, which is ~~derived~~ isolated from a microorganism.

73 (Currently amended). The purified non-reducing saccharide-forming enzyme of claim 62 obtainable from ~~a microorganism selected from the group consisting of Arthrobacter sp. S34, deposited under accession no. FERM BP-6450, and mutants thereof.~~

74 (Currently amended). ~~[[The]]~~ A purified non-reducing saccharide-forming enzyme, which has the following physicochemical properties:

- (1) Action

Forming a non-reducing saccharide having a trehalose structure as an end unit from a reducing partial starch ~~hydrolysates~~ hydrolysate having a degree of glucose polymerization of 3 or higher;

(2) Molecular weight

About $75,000 \pm 10,000$ daltons on sodium dodecyl sulfate-polyacrylamide gel electrophoresis (SDS-PAGE);

(3) Isoelectric point (pI)

About 4.5 ± 0.5 on isoelectrophoresis using ampholyte;

(4) Optimum temperature

About 50°C when incubated at pH 6.0 for 60 min;

(5) Optimum pH

About 6.0 when incubated at 50°C for 60 min;

(6) Thermal stability

Stable up to a temperature of about 55°C when incubated at pH 7.0 for 60 min; and

(7) pH stability

Stable at pHs of about 5.0 to about 10.0 when incubated at 4°C for 24 hours.